Quality Control

Work Orde November-21-13	r ID 109535 2:34:08 PM		*109	1535					Page 1			
Item ID: D2282-7 Revision ID: Item Name: Tube		A	Accept	*N900040100					etup Star Stop	I VI	S1* S2*	
	11/21/13 Start Qty: 20.00	*20* *20*			t Item II tomer:) :				IVI		
Approvals:	Process Plan:M_5	Date: 13-11-22	Tooling: SPC (Y/N):		Da	te: te:		R	un Star Stoj	,IZI	R1* R2*	
Sequence ID/ Work Center II	Operation Description		Set Up/ Run Hours	То	ol ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp	
Draw Nbr	Revision Nbr											
D2282	Rev E											
*100 *100* Hardinge Hardinge CNC Lather		SMALL per Dwg D2282 and Folio FA	0.00 0.00 1190					-2 0_		JFC	2013-12-0) /
*110 *110*	2-Deburr QC2- Inspect parts off i	nachine FAI/FAIB	0.00					20	Φ_		JFC 2013	- YZ:OJ
Quality Control	OCS Increat parts se	cond check	0.00	,								
*120 *120* QC	QC8- Inspect parts - se	cond check	0.00	AS 40 9-89	13/17	2/02		20	Ø			

DQA:			Date:						_				_	TRAG
QA Closed:			Date:			WORK ORDER NON-	-CC	ONFO	RMANCE / UPDATE	W	ork Order up	odate only		AEROSPACE
		··				DISPOSITION			AGAINST	DE	PARTMENT	/PROCESS		
Work Orde	er: -					Rework			Skid-tube Crosstube					Engineering
Part N	lo.					Scrap Use-as-is			Machining Small Fab	Ē	4	d. Eng. Coor. re/Packaging		Quality Other
NCR No.				Suspected Unapproved		Thermoforming Finish Large Fab Compo]	Supplier]			
Root					Desci	ription of work order update	Ī	nitial	Action		Sign &	1011111111		
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Description		Date	Verification	\perp	QC Inspector
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Handling/Pre														
Material				'										
Operator														
Offset/Setup														
Process														
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		Bending				Bend		Folio/I	Program	L	Outside Dim	ensions	P	ressure/Forced
		Centre No	ot Concer	ntric		BOM/Route	L	Grain		L	Over/Under	tolerance	s	et-up
		Cracks				Broken/Damage/Defect	L	Hardw	are		Part Incorre	cí [_ 1	emperature/Cure
		Crimp/Kir	nk/Ripple	/Wave		Burrs	L	Inspect	tion Incomplete/Unqualified		Part Lost/Mi	issing		Veld
		Cuffs				Contamination		Instruc	tions Incomplete/Unclear		Part Moved	L	v	Vrong Stock Pulled
	L	Crushing				Countersink	ş	Misali	gned/off center	L	Positioned V	Vrong _		
	Heat Treat		Cut Too Short		Mislab	eled		Power Loss/	Surge	<u> </u> c	ther			
	→ -		Drawing		Misrea	d								
		Marks/Ch	atter			Drill Holes		Off-set	:					
			Finish		Out of	Calibration								
	Wave/Twist in Tube			Fit/Function		Out of	Sequence			-				

Work Orde	r ID	109535
November-21-13	2:34:0	8 PM

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November-21-1.	3 2:34:08 PM	1			Page 2								
Item ID: Revision ID:	D2282-7		F	Accept	*N900	040	100) *	Setup S	Start	*N:	S1*	==
Item Name:	Tube									Stop	*N:	S2*	
Start Date:	11/21/13	Start Qty: 20.00	*20*		Cust Item 1	ID:							
Required Date:	: 11/21/13	Req'd Qty: 20.00	*20*		Customer:								
Reference:							_	,	n (C4 4			
Approvals:	Process Pla	n:	Date:	Tooling:	D	ate:		I		Start	*N	R1*	
	QC:		Date:	SPC (Y/N):	D	ate:			;	Stop	*NI	R2*	
Sequence ID/ Work Center I	D	Operation Description	waool	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Rejec Qty		Reject Number	Insp. Stamp	_
130		Identify as per dwg & Sto	ock Location:	0.00							Ŀ	~	
130 Packaging		Memo		0.00				20 K				3-12-0	W.
Packaging		***STOCK	IN LARGE FAB***						/			DA: 26 9-89	;
140		QC21- Final Inspection -	Work Order Release	0.00				$I \cap$	1/				
140		Memo		0.00				4	/ K	<u>m</u>	13/10	2/03	
Quality Control											<i>€</i>	2/03 MF 13-12	0

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0.4.61			Data			WORK ORDER NON-	-CC	ONFO	RMANCE / UPDATE	\A/	ork Order up	data only	AEROSP.	ACE	
QA Closed:			Date:	<u>=</u>			_			VV	ork Order up	date only	<u>i</u>		
Work Orde	er:					DISPOSITION	ļ		AGAINST	AGAINST DEPARTMENT/PROCESS					
	•				_	Rework	ı		Skid-tube Crosstube	•]	Water Jet	Engineering		
Part N	lo.					Scrap			Machining Small Fat	_	Pro	d. Eng. Coor.	Quality		
	•				_	Use-as-is	Use-as-is Thermoforming Fini			\subseteq	Rec/Sto	Other			
NCR N	NCR No.				Suspected Unapproved Large Fab Compos			Large Fab Composite	<u> </u>		Supplier				
Root		·			Desci	ription of work order update		nitial	Action		Sign &				
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Description		Date	Verification	QC Inspect	or	
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Unapproved			<u> </u>	l			<u> </u>				<u> </u>				
							FA	ULT CA	TEGORY						
Landi		I			_	General		1 //	_	_	٦	. г			
	\vdash	Bending			 -	Bend	⊢	4	Program	-	Outside Dim	<u> </u>	Pressure/Forced	3	
	L	Centre No	ot Concer	ntric		BOM/Route	<u></u>	Grain		\vdash	Over/Under	-	Set-up		
	⊢	Cracks	1 (5)		-	Broken/Damage/Defect		Hardw:		\vdash	Part Incorre	<u> </u>	Temperature/Cu	ure	
	<u> </u>	Crimp/Kir	nk/Ripple	/Wave	\vdash	Burrs		1 '	tion Incomplete/Unqualified	\vdash	Part Lost/M		Weld	المطا	
		Cuffs				Countaries	\vdash	4	tions Incomplete/Unclear	\vdash	Part Moved	_	Wrong Stock Pu	пеа	
	_	Crushing			-	Countersink	\vdash	1	gned/off center	\vdash	Positioned V	_	Tothor		
	\vdash		Cut Too Short	-	Mislab		L_	Power Loss/	ourge	Other					
	 	Inspection Strip in Tube Drawing			\vdash	Misrea					****				
	<u> </u>	Marks/Chatter Drill Holes			4	Off-set Out of Calibration									
	Turning Sequence				Finish	\vdash	4								
L	Wave/Twist in Tube			oe		Fit/Function	<u> </u>	Out of	Sequence				·····		

November-21-13 2:34:07 PM

Page 1

Work Order ID:

109535

Parent Item:

D2282-7

Parent Item Name:

Tube

Start Date: 11/21/13

Required Date: 11/21/13

Start Qty: 20.00

Required Qty: 20.00

Comments:

IPP Rev:A

Removed from 9 Digit

05-12-02 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304TR0.675W.091		Purchased	No			100	f	92.4360	0.0666	1.402106			
304 RD Tube .675 x .091V	W												
				Location		Loc Oty	Lo	c Code					
				MAT017		92.436							
				1163	886	31.149							
				1168	3 <u>56</u>	36.381			1.4	02106	JFC	2013-	12-01
				1175		6.68							
				1206	333	18 226							

& MATL NOT PULL OUT

DQA:	Date:									TRAG				
						WORK ORDER NON-	-CC	ONFO	RMANCE / UPDATE	147.	Oud	data ambu - F	_	AEROSPACE
QA Closed:			Date:					_		VV	ork Order up	date only		
Work Orde	·r·					DISPOSITION	ı		AGAINST	DE	PARTMENT	PROCESS		
Work Orac					-	Rework			Skid-tube Crosstube]	Water Jet	7	Engineering
Part N	lo.					Scrap			Machining Small Fab	-	Pro	d. Eng. Coor.	7	Quality
	-					Use-as-is	Use-as-is Thermoforming			ing Rec/Store/Packaging			٦	Other
NCR N	۰ ۱٥					Suspected Unapproved]	Supplier		
Root	Des				Desci	cription of work order update		nitial	Action		Sign &			
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Description		Date	Verification		QC Inspector
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Equip/Tooling														
Handling/Pre											İ			
Material							İ							
Operator				<u> </u>										
Offset/Setup														
Process	Н													
Supplier														
Training	Н			ļ										,
Transport	Н												1	
Unapproved			l	<u> </u>			EA	III T CA	TEGORY			<u> </u>		
l and:	(`~~"				General	FA	OLI CA	TEGORT		·			
Landi	$\overline{}$	Bending				Bend	Г	Teolio/I	Program	Г	Outside Dim	ensions [\neg_{P}	ressure/Forced
		Centre No	nt Concer	ntric		BOM/Route	\vdash	Grain	10814111	\vdash	Over/Under		_	et-up
		Cracks	or concer	T.C. T.C.	<u> </u>	Broken/Damage/Defect	\vdash	Hardw	are	\vdash	Part Incorre	-	_	emperature/Cure
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		Cuffs	,, pp. c	,,		Contamination		1	tions Incomplete/Unclear		Part Moved			Vrong Stock Pulled
	-	Crushing				Countersink	H	4	gned/off center		Positioned V	ے Vrong		<u>.</u>
	Г	Heat Trea				Cut Too Short		Mislab		Г	Power Loss/	· ·	$\neg \circ$	ther
1	├ ─┤		Drawing		Misrea		_	·	_	•				
				Drill Holes		Off-set								
	Turning Sequence Finish					Out of	Calibration							
	Wave/Twist in Tube					Fit/Function		Out of	Sequence					

DART AEROSPACE LTD	Work Order:	109535
Description: Handle Tube	Part Number:	D2282-7
Inspection Dwg: D2282 Rev: E		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.795	+/-0.010	0.799	$\overline{}$		Caliper	Dfc-01
0.493	+/-0.010	0.490	\checkmark		1	11
0.675	+/-0.010	0.673	/		\ <i>(</i>	
	-					
			·			

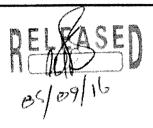
<u>'</u>		\sim \sim \sim		
Measured by:	Audited by:	40	Prototype Approval:	N/A
Date: 2013-13-01	Date:	13/12/02	Date:	N/A

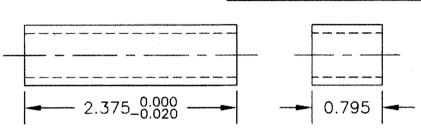
Rev	Date	Change	Revised by	Approved
Α	03.11.11	New Issue P/O D350-615-041	KJ/RF	
В	05.04.19	0.795 was 0.750	KJ/JLM	
С	06.03.15	Dwg Rev update	KJ/JLM ,	
D	07.07.17	Dimensions added per Dwg Rev. E	KJ/JLM A	星
		9		

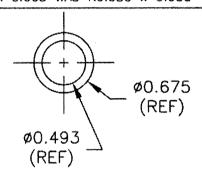
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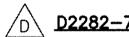
	DESIGN BW		DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	CHECK	P	APPROVED I	DRAWING NO. REV. E D2282 SHEET 1 OF 2	
	DATE			TITLE SCALE	
	05.0	6.07		HANDLE TUBES 1:1	
	Α		94.10.14	NEW ISSUE	
	В		95.03.23	RE-DESIGN	
	С		97.10.20	CORRECTED NUMBERING SCHEME	
	D		05.03.16	REDESIGN D2282-5; 0.795 WAS 0.750	
	E		05.06.07	D2282-5 304 SS WAS 303 SS; R0.063 x 0.063 WAS R0.080 x 0.030	







D2282-3



D2282-3/-7 TUBE:

- 1) MATERIAL: T304/T316 3/8 SCHEDULE 40 (REF. DART SPEC. M304TR0.675W.091)
- 2) BREAK ALL UMARKED SHARP EDGES 0.005 TO 0.010
- 3) ALL DIMENSIONS ARE IN INCHES

4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED R0.063 x 0.063 DEEP 4 $0.090 \times 45^{\circ}$ 0.95 -**CHAMFER** 0.158 Ø0.700 R0.350 -Ø0.386 0.125 $0.080 \times 45^{\circ}$ (REF) **CHAMFER** 2.1 D2282-5

D2282-5 STEM:

- 1) MATERIAL: AISI 304 STAINLESS STEEL (REF. DART SPEC. M304R0.750)
- 2) BREAK ALL UMARKED SHARP EDGES 0.005 TO 0.010
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

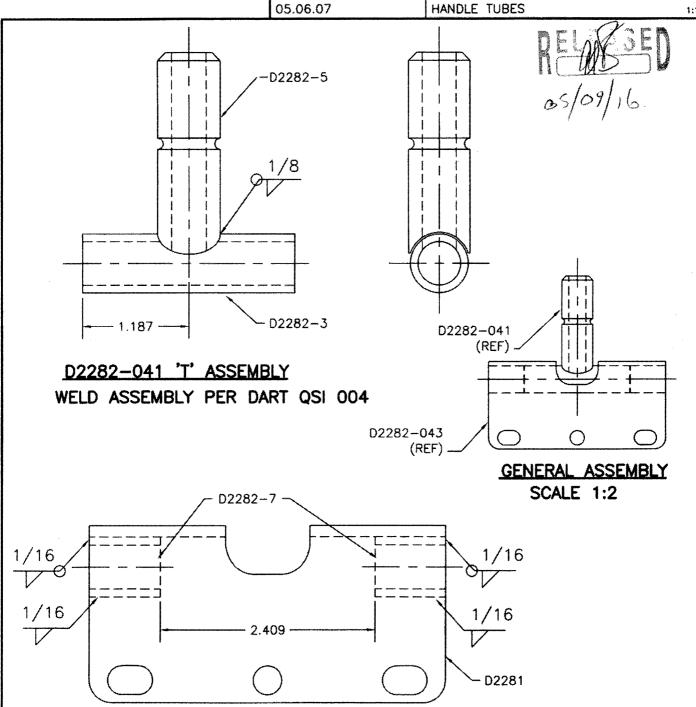
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u'	lano	D2282	SHEET 2 OF 2	
DATE		mile .	SCALE	
05.06.07		HANDLE TUBES	1:1	



D2282-043 SADDLE ASSEMBLY WELD ASSEMBLY PER DART QSI 004

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